

ABSTRACT OF THE DISCLOSURE

A new slurry for shallow trench isolation (STI) processing in the chemical mechanical planarization (CMP) in microelectronic industry comprising an aqueous medium having an abrasive; and a compound which has a carboxylic
5 group and an electrophilic functional group. The combination of ceria and/or titania with amino acids to obtain polishing selectivity's greater than 5:1. CMP is used for removing the excess oxide and planarizing the substrate and the trench. The silicon nitride acts as a stop layer, preventing the polishing of underlying silicon substrate.